FIG. 1

The nucleotide coding sequence (SEQ ID NO:1) and amino acid sequence (SEQ ID NO:2) of bovine lysozyme

atg aag get ete gtt att etg ggg ttt ete tte ett tet gte get . Here F = F = F = V . The G = F = G = F = G = V = Kgtc caa ggc aag gtc ttt gag aga tgt gag ctt gcc aga act ctq Y Q G K V FERCELART'L aag aaa ctt gga ctg gac ggc tat aag gga gtc agc ctg gca aac tgg ttg tgt ttg acc aaa tgg gaa agc agt tat aac aca aaa gct WLCLTKWES S Y N T K aca aac tac aat cct agc agt gaa agc act gat tat ggg ata ttt 1 cag atc aac agc aaa tgg tgg tgt aat gat ggc aaa acc cct aat Q I M S H W W C N K T P S D C gca gtt gac ggc tgt cat gta tcc tgc agc gaa tta atg gaa aat A V D G C H V S C S E L M E N gac atc gct aaa gct gta gcg tgt gca aag cat att gtc agt gag caa ggc att aca gcc tgg gtg gca tgg aaa agt cat tgt cga gac $\mathcal{O}=G$. The A_{1} - W is A_{2} - W , A_{3} - W , A_{5} - Wcat gac gtc agc agt tac gtt gag ggt tgc acc ctg taa H D V S S Y V E G C T L *.

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FIG. 2 (sheet 1 of 4)

Nucleotide sequence of the plasmid p1044-BoLys

extends from nucleotides 5767 – 6211 of the viral vector; the sequence encoding bovine lysozyme, including the stop codon, is inserted as a PacI-Xhol fragment and is shown in lower case letters, underscored

CATCTAGGAA GTGGTTAATC AAACCAACGG ACCTCAAGAG TGGTTTCCCA TCGATTCGAT TGGGATGAGA GCATTAGAGA GATGTTTTT CTGACTCTCA STATITITAC AACAAITACC AACAACAACA AACAACAGAC AACAITACAA TIACIAITIA CAAITACAAI GGCAIACACA CAGACAGCIA ACTGTCCGAG GAAACAACTC CTTGGTCAAT GATCTAGCAA AGCGTGGTCT TTACGACACA GCGGTTGAAG GCGTATCCAG CTGATGATGC TGCTGCATGC GGGGGAAAA ACATGCGAAC GCGCCACTCT GACGAAATCA TCTAATATTC ACCTGGTTTT GCAATGGAAG TCCAAGGATT TTTACCTGC GACATTAGGA TICGIAAGCA GAIGAGCICG GTCCATGACG CCAGCATGTG GGCAGGCGAC ATTGGTAGTT TCATCCGGAA CTTCGTCGAA GCCTGCGCTT ATTCGATGTT TGAGAGCGGT TGCTACCCGG ACTGGAATAT AGGGACGAGC ATATGTACAC GCTAGAGAGA TACTTTCCAG TGAGTTCGGG CGTCAATTTG TCATAGITAI GTTTTATACT AGTCAATTAC CGCGCAAGGA AGTCTTAGTG CAGAGTTAAT ATTCATCATC AGTCTGACAA TTGCTGGAGA ATGTTTTGTC CTGTGGACAT TCATGAGCAA CTGCTGCGGT TCGTGACCGC AGGCCCAAGG TGAACTTTTC AAAAGTAATA AGCGAGGAGC AGACGGTTAT GATCTTTAGA ATTGAACTAT ACCTTTCTAG TACCAGCCGA TTAATTACTG TACAATCCTT AAACGGTGTG TTATCAGAGT CAGAAGGTGC TCTGTCACAA AAGATTCATG TTTAGTCAC ATAGTGAGCA TCAAAGATAC AGCTGCTATT GACCTTGAAA CCCGTCAAAA GTTTGGAGTC TTGGATGTTG CICGGIICGA ATATATGACA CTGCTTCTTG AAAAGTGTAG CTCCTTGAGG AGTAAGAGGA ACATACGCAA AAATCTTTGT AACAGGAAAC TACAAGGCCT GTGTTAAGGG ATAGTCGCGG GAGAAGGCTT TTAGCTGGTC GATICGITAA GCATCACTAT CATCTGTTCA GAAGACGCTG GGTGGATTGC GAGAGTACTC ATGAAGGAGT GAGGCTCTTG TAGCCTGGTA GAAAGCTCTT GGATGTGGAC CAAGITIAGI AGAATTATCG AGCGAAGGTT ACAGGATCAA AGAGTTACAA GGCGACGGCA TGTGGCCCAT CGAGAGAATC AGTGACTGAG ATCATGCGGC ACGAAGGCCA GAAAGACAGT AGAGGTTTAC AACACGCAAA ATGCCGTGCA TTCGCTTGCA GCTACACAGC CTCCGAGAAC TTTTGCATCA TTTGGAGACT TTTGCATCG AGAAATTCCT TACTGATTAG CCGTGAAAGA ATGCACTTTC CAATGACGGC TGGCCAGAGG CAAATGAAAA ACTTTATCGA TAGGCGGGAA TGTGCAACAG GGTCCGAATG ACGACAGATT CGCTAGCTTT AGTTTCATAT CCTCTAATAG ACAGATACGC TGACCTTTTC TGTACAAAGG CATACCAGGC ATGCCATTGC CTTTCCACTT TCGACATTTC TCTTTAGAGC GAAGTTGACC CACATTCGAA AAGGATGACT GCATTTCCCT GTGACCTTCC AAGGGTTCGA ACTTATGACA GAAGCATTTG TACTTCCCGG ACTCTTGCAA GTACCATTAT GTGATGTACA GCGAATGTTG GGCAGAGTGT TGCTATGCCG GGAGACAAGT ACTTTTCTTT GTGACAGCGA TAAAGTTCAG GGAGATAGAG TTTGCTGGAC TGCCGTTCTA CCCAGATGTG CCAATCTTTG CATITGAACG ACCIACIGAG ACCGTCCATG TACATITAT CGGATCATTG CGTTCGAGAC CTTCCAAAAG GCAGCAATCA TTCGCGCGAT TAGAATAGAT TTACAAAAAG AAATGAGGGA TATGGTCATC AGTGCTTAAC CATTAACGGT GTTTGGGAAC TGATCTATAT AGAAACGGAA TGTCCATACG GTGCAAAACT AAGTTGAAGA CTAAGAACGA CGGGTCCGAT AGAAGATGGA AGTTTAACGC AAATTCCCTA CAGTCCCCAA TCGTGTTCAC ATACTAAGCT TTTCGCTGGC CCACATCAGC AATTCCAAAT CCAACCTGGA ATCAGCCGAT TGAGGAAAAA ACGCGTGTTT TTAAGTATGT GTAAGTTTTC ACGCATGGCA CGAGGGTAAT TCAGGGTGCC

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FIG. 2 (sheet 2 of 4)

GAAGTATCAT GTGGCGCTTT TGGAATATGA TGAGCAGGGT GTGGTGACAT GACATGGCGA AACTCAGAAC TCTGCGCAGA CTGCTTCGAA TCCAGGGTTA ATTGATGAAG CGGAGACACA CAGCAGATIC TAAAAAGTCT GTTTCGCAGG TTAACCCCTA ACTGTTGTTA TTTTACTATG GTCAAAGATT AACGCACCCG AGTTGTCTGG CATCATTGAT ATTGAAATA TTCAGTAGAG GGATTTGCCA GCAGTTGATC TITGCAGACG ATTGTGTACC CTGGATATAT CGAAGACTTC TTGGGAGAAG GCATCTGGTA TCAAAGAAAG AGCGGGGACG GCCTTTTGCG TCGTTGAACA TIACACACAG TIGGACGACG CIGTAIGGGA GGTICATAAG ACCGCCCCIC CAGGTICGIT IGITIATAAA AGICIGGIGA AGTATTTGTC TGATAAAGTT CTTTTTAGAA GTTTGTTTAT AGATGGCTCT AGTTGTTAAA GGAAAAGTGA ATATCAATGA GTTTATCGAC aatgagtcat tgtcaggggt gaacctictt aaaggagtta agcttattga tagtggatac gtctgittag ccggtttggt cgtcacgggc SAGTGGAACT TGCCTGACAA TTGCAGAGGA GGTGTGAGCG TGTGTCTGGT GGACAAAAGG ATGGAAAGAG CCGACGAGGC CATTCTCGGA GACACGCAGA ACTACTCTCC AAAGAAGCTC ACACAATAGC GAAATGCCAC AGATTTTGT GACAGAGGAT GCATTGTGA TTACGATCCC CTAAAGTTGA GAAGCAAAAC CTGACAAAAATGGAGAAGAT CTTACCGTCG ATGTTTACCC CTGTAAAGAG TGTTATGTGT TCCAAAGTTG ATAAAATAAT GGTTCATGAG GTCAGITCAA GAGGITAIIC CCAATCGGAT CTGATGTTTC ACTAGTTAGG CAAGTACTAC CGATGCAGGA TGATTCGAGC TICAGAAGGI CICITIGIGA IGIIGCIGII AGAAATTCTT CTCAGGGATT TGATATGCAG TTCATTGAAT CCACTAATAC CTATGGTACG AACGGCGGCA TGTTTCTTTG TGTCTTGGAG TGGAGAAAT AATCAAAGGA TITCCAAAGG GIIGIGAGII ICCGGAIGIG CAACACICCG CGAAICIIAI GIGGAAITII CCGGGCTGTG GAAAAACCAA GTGCGAATTC TGCGAAATTG CATATGTTTA GICATGAGCA CITCTICGGI TGACTTTTAC TCAAGGCACA CCTGTTCGCT TTGTTAGATA TGTATAAGGT GTGATATTTC TGACTGACAT GCTTAAAGAA AAAAGAAAAC CAAATAAAAA GAAAAGCAGG AACAGGTAAC AATAGGCCAG CTCGCAGATT TTGATTTTGT GGACACTICA AICCAAACGG AGIACCCGGC TGGACAGTGT GACAGICAIG IGCCGAIGGA AGAATACGAG ATCTGGCGAA GATTGGGTTT ACGAGGTGGA TTGGAAGTTG CGCGGAAATG ATCAGAAGAC AGCACACGCT GGCAAGATCC CCAAAGACTG ATAAAAACTT CATTGGAAAC ACTGTGATCA TTGCTGCATG TTTGGCCTCG ATGCTTCCGA GAGACATACT ACCATGAGGT AGGCAATTAC TGTTTATTCC TICTIGIGGC GAIGICALIG GGTCGCATIG TGAGCTTACC GCGCAGATIG AGGALTICIT CGGAGAICTC TTTTGGGAAA TGAGGGCTTT CGATCTCAAA ACCCTTGCAT TAGCTCGTAC TGATGCTGTT TCAAATCAAA TACCGCAGGT TGTTTAAAAA ACAGTATGGA TACTTTTGCG GAAGATATGT AATACATCAC TGGTGCTAAA CACATCAAGG ATTGGGAACA CTTGGAGGAG GGACGGAGTT TTTTGCCAAA AGTGCAAGGC TGTTGCAGCG AAGAAACTTT CCAAGAGTCA TGCATGGGGT GTTGTTGAAA CCCACGCGAG CTGTGCATGA CGATGATTAA GGTTGTAGAT AAGTTTTTG ATAGTTATTT TCAAGGATTA TCATGATGAA ACCCCCCCCA ACAGGAGATA TAGAGAAACT TCTGTTGCTG CGCCTAAGGA AACAAAAGTT CGTTGTTTAG CTGAGTCTGT TIGITCITGI GGAAGCAAGC CACATGTTTT CCAATCTTTT TGAATAATTT ACTGTGCAGT GATCAATGCA ATATTCGGCC AATGAATTCC GAGAAGAGTA GCTGTTAGCT AGCGCAAAGG TTAGTACCTG GTTGATTCTT TGTGTTAATT GGATTCCCGT CATTATCTGA GTGATCAATC GATGTTCACA ATTAGAGATC TICAAAGGII AGCACCATGA AATTTAGTGG GCACAACCCA ITTGGAAACA AGGGCATAGA AAGACCACCC GGAGACAGCC ACTATTGGAA CGTTAAAACC TAGAGTTTCA CGATGTCACA CGGAGCCGCC AGGGTATICA CATCATTGCA TGACTCGGTG CCCAGGCAAC TATGTCTAAG TAGATGGTTA AAAGACACCA CAAATCTCAG TCTGCTGTAC GCATGTCAGT AGATCTAATT GCATACTGGT AGTTAGTATC CATGATTAAA TGCTTTCAAG ATTTTGATGA GCCAGACTGG TTTTCACAAG TCTCGAAACT ATTGTGCGTA SCGATGATTG CGAAGGACAA CATACATCAA GTTGTCCAGC AGATGGTCGG CACCGGTCTC IGGATCCTTT AATTACAGAT ATAAGTGTCT GCATATTGGA CTGCATCTTT AGTCTCTCAA AGTACAGACA ATTCAAAAA CAAAATACGA TCACGACGIT STGACGATAG ACGGAGAACC GGTTGATGTT



FIG. 2 (sheet 3 of 4)

CGTTGATGAG GAAAAATAGT AATCGATGAT GATICGGAGG CTACTGICGC CGAAICGGAT TCGTITIAAA TAGATCTTAC AGTATCAT CTCCATCTCA GITCGTGTTC ITGTCATTAA ICTIACTACA CAGCAGCTGC AAAGAAAAGA TTTCAGTTCA AGGTCGTTCC CAATTATGCT ATAAC¢ACCC AGGACGCGAT GAAAAACGTC TAGTTAATAT TAGAAATGTG AAGATGTCAG CGGGTTTCTG TCCGCTTTCT CTGGAGTTTG TGTCGGTGTG agaaataata taaaattagg tttgagagag aagattacaa acgtgagaga cggagggccc atggaactta cagaagaagt ATGICCCTAT GICGATCAGG CTIGCAAAGI IICGAICTCG AACCGGAAAA AAGAG†GAIG ICCGCAAAGG AGTAGTGATC GGTCAGTGCC GAACAAGAAC TATAGAAATG TTAAGGATTT TGGGGGAATG AGTTTȚAAAA AGAATAATTT TGGCAAGTTT TTCATGGAAG

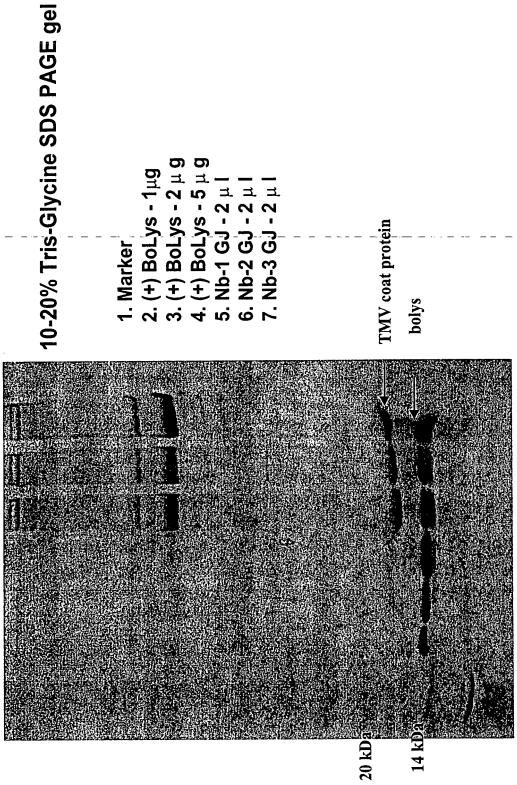
aaa tgg gaa agc agt tat aac aca aaa gct aca aac tac aat cct agc agt gaa agc act gat tat ggg ata ttt cag atc aac agc aaa tgg tgg tgt aat gat ggc aaa acc cct aat gca gtt gac ggc tgt cat gta tcc tgc agc gaa tta atg gaa aat gac atc gct aaa gct gta gcg tgt gca aag cat att gtc agt gag caa ggc att aca gcc ctt gcc aga act ctg aag aaa ctt gga ctg gac ggc tat aag gga gtc agc ctg gca aac tgg ttg tgt ttg acc atg aag got oto gtt att otg ggg ttt oto tto ott tot gto got gto caa ggo aag gto ttt gag aga tgt gag CTCGAGGGGT AGTCAAGATG CATAATAAAT AACGGATTGT GTCCGTAATC ACACGTGGTG CGTACGATAA CGCATAGTGT TTTTCCCTCC ACTIAAAICG AAGGGITGIG ICTIGGAICG CGCGGGICAA AIGIATAIGG IICATAIACA ICCGCAGGCA CGIAAIAAAG CGAGGGGITC GGGTCGAGGT CGGCTGTGAA ACTCGAAAAG GTTCCGGAAA ACAAAAAAGA GAGTGGTAGG TAATAĢTGTT AATAATAAGA AAATAAATAA TTTAATCAAT GTGTACAAAT TAGTATGACA TATTAAATAG CTTCGATACT TGCGACTGTA TGCTAGTGGA GGGTGGCTGA GTGTATACTG CGTCCACTTA TATACTGTGG TATGGÇGTAA AACAACGGAG AGGTTCGAAT TGCGCTCACT GCCGGTTTC CAGTCGGGAA ACCTGTCGTG TIGGGCGCIC TICCGCTICC TCGCTCACIG ACTCGCTGCG GCAGGCATGC tgg gtg gca tgg aaa agt cat tgt cga gac cat gac gtc agc agt tac gtt gag ggt tgc acc ctg taa TATCG¢GTCA TCGAGTACGT TTATGCAGAT CCTGT¢CAGC TGATCAATCT GCAATTIGCG GAIGCCIGGA AACCIGIGCC GCGACTCAGA GGGTAGACGA GCTTTGAGAC TTAAAATTCA ATCTGGATCC AACAGTTAAA CCATGTGATG TGGCTGATAC CAAAAİCAGC AGTGGTTGTT CGTGAGGACG AAACCTGGCT TCCACACAAC ATACGAGCCG TGATCCGTTG ATCACGGCGT AATCAÄGCAA CACTGAAGAC AATCGTTAAC TGGCATGTTC CGCTCACAAT ATGACGAGTC CTGATGAGTC AAAATAAAGT TAGTGGTAAG AAAGGTTTGA AAGTTGAGGA AATTGAGGAT AATGTAAGTG CCAGCTGCAT TAATGAATCG GCCAACGCGC GGGAGAGGC GGTTTGCGTA TCCGAGCCAA TTTGTTTACT TAAGTTCCGC GCTAGGACAA CAGTCCAACA CCCGCACCGA ATACTACTGA GTTCGTCCAC TTAAATATAA CGATTGTCAT CTGCATCGGA TITCTATGTG TATAGATATA ATTCGACGCT TGAAGACTTA AAATTCAGGG AGTTAAACCA TGTGATGGTG ACCCGGATGT GTTTTCCGGG TCCTGTGTGA AATTGTTATC AATGAGTGAG CTAACTCACA TTAATTGCGT TTCGTGGAAC GAGATTTCCT AATGAACTGG CTATIGITGI TGGATCCAAC TAATcatggt catAGCTGTT GCATTGGGTA ACCAGTTTCA AACGCAACAA TGATAATCAA TAATTTGGCT GGCTACTTAG GAAAAGTCGC CCGCGGGTAG CGGCCCAGGT CAATCAACTC CCACAACTCC TGGGGTGCCT TAATAGAGGT CTTCAATCAA AGCAGTGGTT TAAAACAACG TTGTCATATC GCTATAAGGG CCTCCCCTAA ATGCCTTATA GTGAGATTTC AGAAATAGAA CTIGICIGGA TACCAAAATC TGGTATGGCG AAAATAACGA AAGCTTGGCG STGTAAAGCC

FIGURE 2 (sheet 4 of 4)

TITCCATAGG CICCGCCCCC CIGACGAGCA GGGGATAACG CAGGAAAGAA CCCTCGTGCG CACGCTGTAG AGATTACGCG AGTAAACTTG GTTGCCGGGA CGTTTGGTAT CATCCGTAAG CGTCAATACG TCTTACCGCT GAGCAAAAAC ATTGAAGCAT TTCCCCGAAA ACCATATGCG TATCCGGTAA GGTATGTAGG AGCCAGTTAC GGATTTTGGT TCCCCGTCGT TCGGTCCTCC TCGCGCGTTT GACAAGCCCG CAGATTTATC AAGGCGATTA AGTTGGGTAA CGCCAGGGTT TTCCCAGTCA CCTGGAAGCT TCTCATAGCT TCAGCÓCGAC CGCTGCGCCT AGCAGAGCGA GCTCTGCTGA TGCAAGCAGC TCACGTTAAG AGTATATG GTTGCCTGAC TCACCGGCTC TCTATTAATT TCACGCTCGT CAAAAAGCG GTTAGCTCCT CAGCACTGCA TAATTGTCTT ACTGTCATGC TCTTGCCCGG CTCTCAAGGA TTTCACCAGC GTTTCTGGGT TTTCAATATT TTCGCCATTC AGGCTGCGCA ACTGTTGGGA CCGCGCACAT GCCGGGAGCA CTGAGAGTGC CCCTTTCGIC GAGCGGTATC AGCTCACTCA AAGGCGGTAA TACGGTTATC CACAGAATCA GCGAAACCCG ACAGGACTAT AAAGATACCA GGCGTTTCCC CGTGGCGCTT TAACAGGATT GTAGCGGTGG TTTTTTGTT ACGCTCAGTG GAACGAAAAC ATCAATCTAA GTCTATITCG TICATCCATA TGATACCGCG AGACCGACGC CTCCATCCAG TTGCTACAGG CATCGTGGTG GTATGCGCC ACCGAGTTGC ACTCTTCTT TTAACCTATA AAAATAGGCG TATCAGGAGG CGGCATCAGA GCAGATTGTA TGGTATCTGC GGGCGAAAA GTAAGCGGAT AATAGGGGTT CTTCGGGAAG AAAATAAACA TGCTGGCGTT AACCCCCCGT GGACAGTATT GAAGTTTAA CTTTATCCGC CCATGTTGTG AACGTTCTTC CATCTTTAC GAATACTCAT CAGCTTGTCT CAGCCACTGG GAACCGTAAA AAGGCCGCGT GCCTTTCTCC TGTGTGCACG CGACTTATCG CCACTGGCAG TACACTAGAA ACGGGGTCTG GATCCTTTTA AATTAAAAAT AGTGCTGCAA GGTCCTGCAA TGGCCGCAGT GTTATCACTC ATGGTTATGG CAAGTCATTC TGAGAATAGT AAAAGIGCIC AICAIIGGAA AATGCCGCAA AAAAGGGAAT AAGGGCGACA CGGAAATGTT CATATITGAA IGTATITAGA GCAGCTCCCG GAGACGGTCA ccgcacagat gcGTAAGGAG AAAATACCGC ATCAGGCGCA CTTCGCTATT ACGCCAGCTG GCGAAAGGGG GATGTGCTGC ACCACCGCTG GITGITGCCA ACATGATCCC TGATCTTCAG TIGGCGGGTG ICGGGGCTGG CTTAACTATG TCAGCGATCT CGACGTIGTA AAACGACGGC CAGTGAATIC AAGCTTAATA CGACTCACTA ATACCTGTCC TAACTACGGC TATCATGACA GATCTTTTCT ATCTGGCCCC GCGCAGAAGT TTTGCGCAAC CCCAACGATC AAGGCGAGTT AGTICGAIGT AACCCACICG IGCACCCAAC CAAGCTGGGC CGGCAAACAA GGCACCTATC AAAAGGCCAG CGCTTACCGG ACGATACGGG AGGGCTTACC GTCAGAGGTG TCGTTCGCTC CGGTAAGACA GAAGGGCCGA AGTGGTGGCC TCTTCACCTA CAGTTAATAG AGAGIIGGIA GCICIIGAIC TAATCAGTGA AGTACTCAAC GCGCCACATA GCAGAACTTT GACGICTAAG AAACCATTAT AAGAICCIII TGAGCGGATA TCTGACACAT CICGGICGII CGGCIGCGGC GGATCTCAAG AAAGGCCAGC CCGACCCTGC TCGGTGTAGG GAGTICTIGA TCAAAAAGGA CAGCCAGCCG GGCTTCATTC AGCTCCGGTT AGAAGTAAGT GTGACTGGTG TATTGTCTCA GGTGAAAACC TCAGCGGGTG CGACGCTCAA GAGTCCAACC TACCAATGCT AGTAGTTCGC CATGTGAGCA CGGTGCTACA CTTCGGAAAA GTCTGACAGT GTTGAGATCC TCACAAAAAT CICICCIGIL GTATCTCAGT CTATCGTCTT CAGAAAAAA CATGAGATTA GTAGATAACT AGCAATAAAC AGCTAGAGTA GATCGTTGTC AGGAAGGCAA ATGCTTTTCT TTATCAGGGT GTGTGAaata GGATAATACC AGTGCCACCT CGGTGATGAC TCAGGGGGGG STGCGGGCCT

Replicase subunits SP-E SP-1

SP-2



bolys

Fig. 4

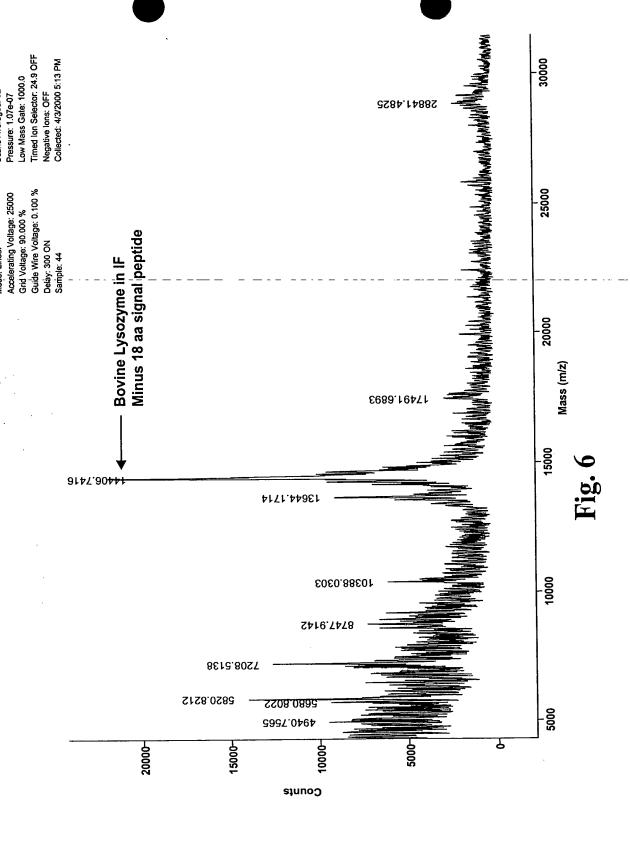
14% Tris-Glycine SDS-PAGE gel

- 1. Marker

- 2. (+) Hen EW lys 5 μ g 3. (+) BoLys 1 μ g 4. (+) Boys 2 μ g 5. (+) BoLys 3.5 μ g 6. (+) BoLys 5 μ g 7. (+) BoLys 7 μ g 8. 1051500 IF crude 1 μ l 9. 1051500 IF crude 5 μ l 11. 1051100 IF crude 5 μ l 12. Marker 12



Laser: 2350 Scans Averaged: 62



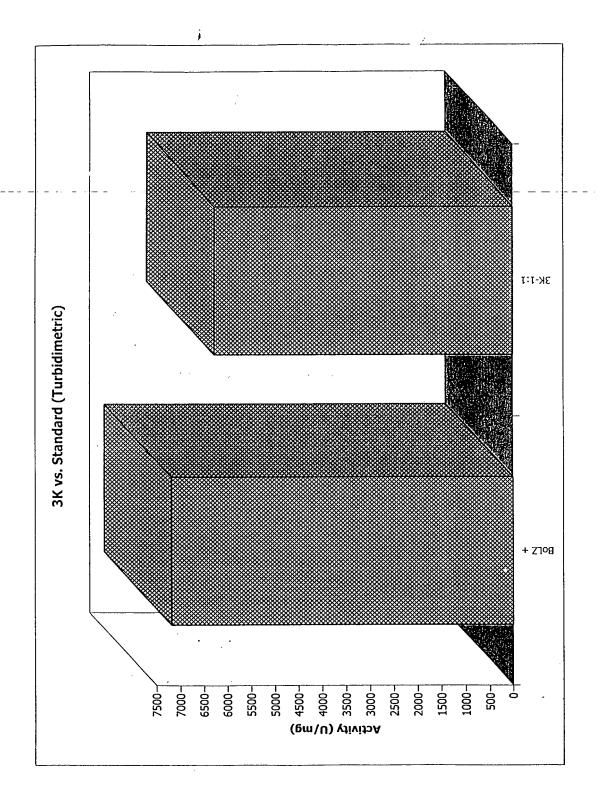


Fig. 7

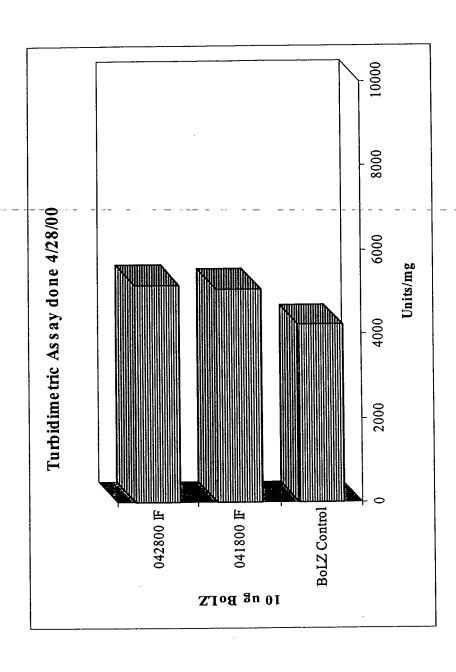


Fig. 8

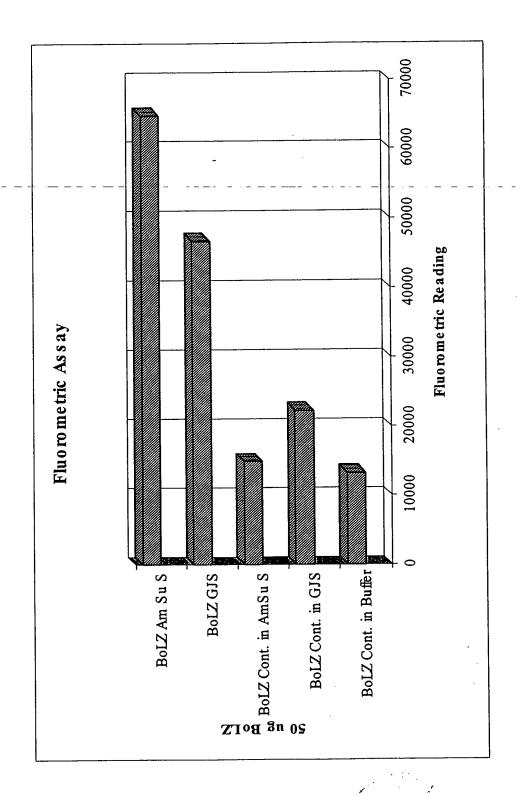


Fig. 9

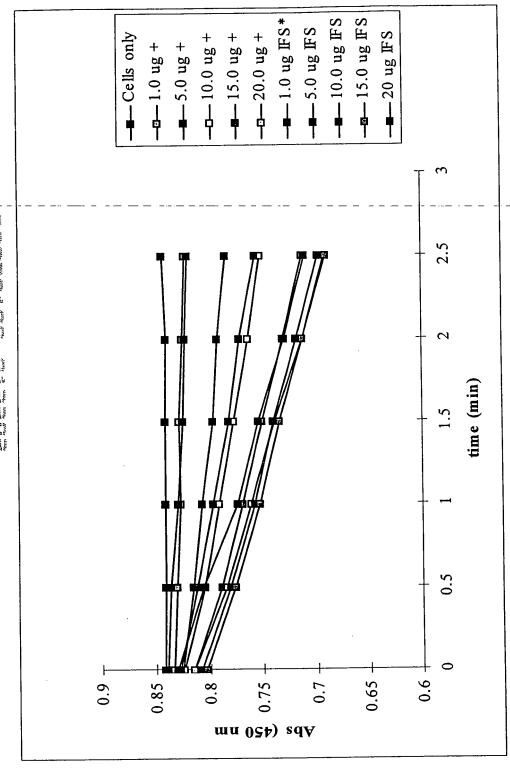


Fig. 10